

## Why Should We Be Concerned About Biological Warfare?

There is a widespread tendency to think about defense against biological warfare as unnecessary, as someone else's responsibility, or as simply too difficult. Unfortunately, however, the dangers posed by biological weapons did not disappear when the United States began to unilaterally dismantle its own offensive program in 1969. The dangers did not vanish with the signing of the Biological and Toxin Weapons Convention of 1972, and they did not dissipate with the end of the Cold War or the threat of nuclear retaliation against Iraq during the Persian Gulf conflict. Only by planning and investing in the right training and defensive measures can we diminish the likelihood that biological weapons will be used and reduce the risks, disruption, and casualties in the event that such weapons are used.<sup>1</sup> Fortunately, significant improvements can be made in our defensive posture at relatively modest levels of investment, and both the Department of Defense and the medical community can play a substantial role in this regard.

Biological weapons are unfortunately characterized by low visibility, high potency, substantial accessibility, and relatively easy delivery. The basic facts are well known: a millionth of a gram of anthrax constitutes a lethal inhalation dose. A kilogram, depending on meteorological conditions and means of delivery, has the potential to kill hundreds of thousands of people in a metropolitan area. These small quantities make the concealment, transportation, and dissemination of biological agents relatively easy. Many of these agents—bacteria, viruses, and toxins—occur naturally in the environment. Moreover, many are used for wholly legitimate medical purposes (such as the development of antibiotics and vaccines), and much of the technology required to produce and “weaponize” them is available for civilian or military use. Unlike nuclear weapons, missiles or other advanced systems are not required for the delivery of biological weapons. Since aerosolization is the predominant method of dissemination, extraordinarily low-technology methods, including agricultural crop dusters, backpack sprayers, and even purse-size perfume atomizers will suffice. Small groups of people with modest finances and basic training in biology and engineering can develop an effective biological weapons capability. Recipes for making biological weapons are even available on the Internet.

These unique characteristics make both military and civilian society vulnerable to biological weapons. It is true that

their delayed effects and vulnerability to weather make these weapons ill-suited to military purposes such as seizing territory. But biological weapons can effectively impede the mobilization and massing of troops that would be required to sustain our role in a conventional conflict. Most disturbingly, they can be used to threaten civilian populations and create mass panic. Used this way, biological weapons can achieve military goals by undercutting the civilian support necessary for military operations or by holding civilians hostage to prevent military operations.

### Why Have Biological Weapons Been Low on Our Agenda?

If biological weapons are so potent and so cheap, if the technology is readily available, and if so many of our adversaries have biological warfare capabilities, then why has this issue been so low on our national security agenda?

There are 3 principal reasons. First, because defense against a biological attack is both unfamiliar and difficult, there is a natural tendency to put it aside in favor of problems that are more comfortable. This is abetted by a second factor: the belief that because biological weapons have never been used they therefore never will be. And this is in turn buttressed by a sense that a regime can be deterred from using biological weaponry if we make it clear that this would invite nuclear retaliation.

These modes of thought are dangerously inappropriate. If we address deterrence first, many argue that Saddam Hussein's unwillingness to unleash Iraq's biological arsenal, in the face of not-so subtle threats of nuclear retaliation, validates the primacy of our deterrent. However, nations are not the only potential users of biological weapons. If one of the most likely scenarios entails their use by nonstate actors, small groups, or even individuals, a nuclear deterrent may be ineffective. Of course, terrorists can often be associated with state sponsors, but the quantum of proof we would require before responding to such a perceived linkage with a nuclear attack would be awfully high. Consider, for example, the forensic difficulty in assigning responsibility for the tragic attack against Pan Am Flight 103 that exploded over Lockerbie, Scotland, in 1988. In the event of a biological contingency, it is especially easy to mask the nature and source of an attack and even to obscure whether it is a natural occurrence. In such circumstances, can we credibly rely on a threat of assured nuclear retaliation? Depending on the agent used, if those exposed just got sick but did not die, what would constitute a proportional response?

The assumption that biological weapons will not be used in the future because they have not been used in the past is based on an error of fact. History is replete with examples in which biological weapons have been used, including the following<sup>2</sup>: in the Middle Ages infected cadavers were catapulted over the walls of European cities and castles under siege; in

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the French and Indian Wars, the British supplied Indians with smallpox-infected blankets; during World War II, Japanese Unit 731 experimented with biological weapons on prisoners of war in Manchuria, resulting in more than 1000 deaths.

There are also abundant examples that bring the threat much closer to home. In 1995, 2 members of a Minnesota militia group were convicted of possession of ricin, which they had produced themselves for use in retaliation against local government officials.<sup>3,4</sup> In 1996, an Ohio man with connections to an extremist group was able to obtain bubonic plague cultures through the postal service.<sup>3</sup> It has even come to light that Aum Shinrikyo, the Japanese cult organization responsible for the sarin attacks on the Tokyo subway system, was working on anthrax and botulism as weapons.<sup>5</sup> The group's biological capability, its production and testing and laboratory infrastructure, and its experimental delivery systems existed for years while escaping detection by Western intelligence.

While it is often said that familiarity breeds contempt, no national security establishment can let unfamiliarity breed neglect. Biology is unfamiliar terrain. As Alan Beyerchen, PhD, has pointed out, the history of the absorption of technology into the war fighting capabilities of the Department of Defense suggests a reason for this blind spot.<sup>6</sup> World War I brought chemists and war fighters together; World War II brought physicists into the fold; and the cold war represented an era of the primacy of the computing, telecommunications, and electronics communities in the defense arena. What little connection the US government maintained with the biological community dissipated when, in 1969, we foreswore any offensive biological and toxin weapon capability. But our forbearance does not imply that of others. The United Nations' inspections of Iraq after the Persian Gulf conflict should be a wake-up call in this regard.<sup>7</sup> Along with the information of a high-level defector who had responsibility for Iraq's unconventional weapons program, these inspections revealed a large-scale biological production and "weaponization" effort that had gone substantially undetected by the West.

### What Should We Do About the Threat of Biological Warfare?

The Department of Defense has embarked on a challenging program to enhance its capabilities to defend against biological warfare. The program includes, among other things, the development and fielding of state-of-the-art biodetectors; the creation and designation of selected military units with expertise in medical prophylaxis, hazard mitigation, and decontamination; investments in vaccine and antibiotic research, development, and stockpiling; refinement and acquisition of masks and improvements in air filtration systems to preclude infection via inhalation; improved intelligence collection and analysis; enhanced training; and the development of doctrine regarding how to preempt and, when necessary, respond to a biological attack.

An additional critical element of this program, however, is the need for an enhanced relationship between the military and those agencies charged with protecting the civilian population of the United States. In that regard, biological weapons necessarily alter our strategic thinking about national security and the nature of warfare. Wars may not always be fought on set-piece traditional battlefields, and it is time to throw away the anachronistic notion that the military's only role is to defend the United States against threats on foreign soil.

In the event of a domestic incident of biological weapons use, no matter who the perpetrator, it is unlikely that the response would be left to local law enforcement and health

officials or even to the Federal Bureau of Investigation, the Federal Emergency Management Agency, or the US Public Health Service. The military would undoubtedly be called on because of its resources, capabilities, and expertise. At the same time, if a biological incident were to occur in a military context, the Department of Defense would look to and need the help of such civilian agencies as the Centers for Disease Control and Prevention (CDC).

Although achieving it is one of our greatest challenges, an enhanced cooperation between military and civilian institutions is also likely to pay big dividends. In some respects the Atlanta Olympics were a good case in point, and the multi-agency partnerships that spanned federal, state, and local jurisdictions will serve as a model for future response.<sup>8</sup> Not only were the Olympics a model of cooperation, but they also marked a milestone for our response capabilities. In the immediate aftermath of the Centennial Park pipe-bomb explosion, bomb fragments were analyzed by Department of Defense assets—set up at a temporary laboratory at the CDC headquarters—to detect the presence of chemical or biological agents; none was found. This marked the first time that a domestic explosive had been routinely screened for those agents.

To facilitate and enhance this civil-military cooperation, Congress recently enacted the Defense Against Weapons of Mass Destruction Act of 1996, which seeks to enhance our domestic preparedness in several fundamental ways, including the following: by strengthening the federal government's ability to prevent and respond to terrorist incidents involving weapons of mass destruction; by enabling the Department of Defense and other federal supports to state and local prevention and response efforts; and by improving the capabilities of state and local emergency responders themselves. More than 100 cities in the United States have already been designated under the provisions of this legislation; their fire, police, rescue, and hospital emergency department personnel will receive training and equipment in an ambitious program conducted by the Department of Defense that began this summer.<sup>9</sup>

From another vantage point, the good news wrapped inside the particular problems posed by biological weapons is that in this arena, public health is the best form of civil defense. Our everyday domestic investments to detect and diagnose disease can and should be strengthened because of our national security trends. Biological weapons are not respectful of traditional boundaries of geography, bureaucracy, or conceptual compartmentalization. In that fact lies our challenge, our opportunity, and our call to action.

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